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on the 27th, 28°; while the minimum on the 28th, the day the plant was taken, was 25°. The word day as here used means the weather bureau day extending from 8 P. M. to 8 P. M. The temperatures recorded by the local weather bureau, situated as it is in the very center of an industrial region whose furnaces are constantly liberating large quantities of heat, are from two to five degrees higher than surrounding territory.

The fern grew in a semi-protected position on the western side of a narrow wooded ravine whose general slope is toward the south. It was frozen solid seemingly when taken, but the frost had disappeared when it was removed from the vasculum in the afternoon. The trees were leafless and all except the hardy plants were killed.

How and why this particular plant was enabled to withstand temperatures which destroyed all of its kind and how much longer it might have survived are points over which one can only speculate.

PEABODY HIGH SCHOOL,
PITTSBURGH, PA.

Notes and news

MR. CHESTER C. KINGMAN

Mr. Chester C. Kingman passed away January 30th, from an operation for appendicitis, at the age of 39. At one time he was very interested in ferns and enjoyed the rare privilege of collecting with Mr. Davenport. During the past six years, he spent most of his time studying and collecting bryophytes.

ELIZABETH M. DUNHAM

W. A. Poyser, formerly secretary of the Society has been appointed editor-in-chief of "The Aquarium," a monthly published by the Aquarium Societies of Chicago, New York, Philadelphia, Milwaukee, Minneapolis, and Boston.

Mr. Carl Christensen is now preparing a supplement to his "Index Filicum." In connection with this, he asks to be informed of any errors, or omissions which may have been noted in the "Index." The supplement will include a list of all the new species and new names proposed since the "Index" was issued and also corrections of any mistakes which may have been discovered in the original volume. Any one who has knowledge of any detail which needs correction should send it to Mr. Christensen. His preparation of the "Index" has placed fern students forever in his debt.

Address, Mr. Carl Christensen, Botanical Museum, Copenhagen, Denmark.

Can the age of a fern plant be estimated with any degree of accuracy by an examination of its venation?

The query is suggested by a brief article which appeared in *Science* during the preceding year and which dealt with the relation of the venation of oak and other leaves to the age of the plant producing them. The writer of the article adduced facts to show that the size of the areolae or vein meshes varied in the plants studied with the age of the trees: the older the tree, the smaller the areolae. This variation he found seemed to hold good not only for the life history of the leaves of a single stem, but also for the leaves of sprouts and trees developed from sprouts. This last fact is most interesting and significant for sprout leaves often appear extra large and in other respects like those of young vigorous seedlings. If it is proved that the

areolae of the leaves of a given species always vary inversely in size with the age of the tree, a fact of very considerable interest and importance will have been established.

Fern students should give this hypothesis a thorough test. Anyone can do this provided sufficient care is taken. The only requisites are carefulness, time and diligence. Reports of such studies will be gladly received for publication in the JOURNAL.

In order to test the hypothesis in the case of any particular kind of fern, the first thing to be done will be to obtain plants showing a considerable range in age. This will need great care, as it is not always easy to tell whether a small plant is a sporeling or stem offshoot from another plant. With the proper material selected, the next step would be the measurement of the spaces between veinlets to determine whether they are constantly different in size in plants of different ages. In order to get results which would be at all conclusive, it would be necessary to examine a large amount of material. *Onoclea sensibilis* suggests itself as obviously the best adapted of our common temperate ferns, but it would be worth while applying the theory to the free-veined species as well.

R. C. B.

American Fern Society

Photographs of ferns and of fern students always make good copy for the JOURNAL, and the editor will be glad to receive any such as may be sent in, especially if accompanied by a contribution toward the expense of reproduction. A full page half-tone plate costs about three dollars; smaller cuts at proportionate rates. It is hoped that at least two such plates may be printed each number.